

Notice of Allowability

Application No.

09/758,131

Examiner

Pedro J. Cuevas

Applicant(s)

MINAGAWA, YUUSUKE

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on September 19, 2003.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 16 January 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No. _____.
- (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
- (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1 ☒ Notice of References Cited (PTO-892)
- 3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 5 ☐ Information Disclosure Statements (PTO-1449), Paper No. _____.
- 7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 2 ☐ Notice of Informal Patent Application (PTO-152)
- 4 ☐ Interview Summary (PTO-413), Paper No. _____.
- 6 ☐ Examiner's Amendment/Comment
- 8 ☒ Examiner's Statement of Reasons for Allowance
- 9 ☐ Other

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

2. Claims are allowed.
3. The following is an examiner's statement of reasons for allowance.

Redzic discloses the construction of a differential motor/generator apparatus comprising:

a first rotor provided with a plurality of magnetic poles by a magnet;

a second rotor provided with a plurality of magnetic poles by a magnet, the first rotor and the second rotor being coaxially and concentrically disposed and rotating independently from each other; and

a stator provided with a plurality of stator coils which is configured to apply a first rotational force on the first rotor and a second rotational force on the second rotor to cause the first rotor and the second rotor to rotate independently from each other, when a composite poly-phase alternating current is supplied to the stator excitation coils; wherein:

the number of magnetic poles in the magnet provided in the first rotor is equal to the number of poles in the magnet provided in the second rotor;

the composite poly-phase alternating current comprises an alternating current forming a rotating magnetic field applying a rotational force on the first

rotor and an alternating current forming a rotating magnetic field applying a rotational force on the second rotor; and

an exciting circuit or electronic device of known type, which excites a part of the rotor coils.

Suzuki et al. teach the construction of a super-precision positioning device having rotors with a plurality of magnetic poles by a magnet and a plurality of rotor coils on each rotor, for the purpose of driving the rotors.

Lamb teaches the construction of an adjustable coupler having a group of magnet rotors with permanent magnets separated by air gaps from non-ferrous conductor elements presented by a group of conductor rotors, wherein:

one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by suspending the excitation of the part of the rotor coils by the exciting circuit and suspending the supply of the composite poly-phase alternating current to the stator coils;

the second rotor is provided with a plurality of pairs of the rotor coils and the adjustable coupler functions as a magnetic coupling in which one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by exciting a specific pair of the rotor coils by a second exciting current and suspending the supply of the composite poly-phase alternating current to the stator coils;

one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by supplying a third exciting current to the part of the rotor coils which flows in a direction opposite to the first exciting current, and

suspending the supply of the composite poly-phase alternating current to the stator coils;
and

the second rotor is provided with a plurality of pairs of the rotor coils and the adjustable coupler functions as a magnetic coupling, which varies a coupling force according to an excitation state of the plurality of pairs of the rotor coils for the purpose of providing a mechanical alternative to VSD's which is far more economical, will automatically maintain the speed of the load to a preset speed as the load requirements vary, and will not require modification of the electric motor or adjustment of the input voltage of frequency.

Eisenbeis teaches the construction of a driving motor having:

a plurality of coils connected in series and arc excited by a direct current; and
collector rings, which supply an exciting current to the pair of the rotor coils for the purpose of determining the speed and direction of the main rotor.

Hawsey et al. teaches the construction of a brushless dc permanent magnet motor with a drive unit, which limits the rotation of the second rotor in a specified direction for the purpose of causing a rotation of the two shafts connected to the rotors in opposite direction.

Koide et al. teach the construction of a power output apparatus and method of controlling the same having:

the first rotor being connected to a drive wheel of a vehicle;
the second rotor being connected to an engine mounted in the vehicle;

the rotation limitation device comprises a one-way clutch which is interposed between the engine and the second rotor, and limits relative rotation of the first rotor and the second rotor; and

a device which locks the rotation of the first rotor;

for the purpose of providing a system to carry out control and enable an engine to output a desired power.

The prior art of record, taken alone or in combination, fails to teach the construction of a motor/generator as disclosed on:

independent claim 1, comprising a stator provided with a plurality of stator coils which is configured to apply a first rotational force on the first rotor and a second rotational force on the second rotor to cause the first rotor and the second rotor to rotate independently from each other, when a composite poly-phase alternating current is supplied to the stator coils; and

independent claim 11, comprising:

a stator provided with a plurality of stator coils applying a rotational force on the first rotor and the second rotor when a composite poly-phase alternating current is supplied to the stator coils; and

a device which limits the rotation of the second rotor in a specified direction.

Dependent claims 2-10 and 12-14 are considered allowable by their respective dependence on allowed independent claims 1 and 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

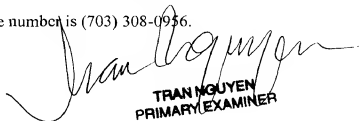
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0936.

Pedro J. Cuevas
October 16, 2003



TRAN NGUYEN
PRIMARY EXAMINER